

Work Order ID 110741

February-13-14 1:13:38 PM

\*110741\*

Page 1

Item ID: D3405-041

Accept

\*N9000040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Gh Lug

Start Date: 07/01/2014 Start Qty: 40.00

\*40\*

Cust Item ID:

Required Date: 07/01/2014 Req'd Qty: 40.00

\*40\*

Customer:

Reference:

Approvals:

Process Plan: AA

Date: 14-02-13

Tooling:

Date:

Run Start \*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D3405

Rev B

100

0.00

\*100\*

Waterjet

FLOW WATER JET

Memo

0.00

FLOW CNC Waterjet

1-Cut as per Dwg D3405

Dwg Rev: B

Prog Rev: B

2-Deburr if necessary

ISSUE PO PO 23011

POSSIBLE SUPPLIER LOEBSACK WATERJET

cmg 2/18/14

105

Receive & Inspect for Damage & Mat'l Certs

0.00

\*105\*

Packaging

Memo

0.00

Packaging

Patty (40)


# Work Order ID 110741

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\*110741\*

Page 2

Item ID: D3405-041 Accept \*N9000040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Gh Lug  
 Start Date: 07/01/2014 Start Qty: 40.00 \*40\* Cust Item ID:  
 Required Date: 07/01/2014 Req'd Qty: 40.00 \*40\* Customer:  
 Reference:

Approvals: Process Plan:  Date: 14-02-13 Tooling: Date: Run Start \*NR1\*  
 QC: Date: SPC (Y/N): Date: Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
115 *115* QC Quality Control	QC6- Inspect dimensions to drawing  Memo	0.00 DAS 27 9-89 14/4/17				40 COE			
130 *130* Brake NC Brake NC	NC BRAKE  Memo 1-Deburr 2-Form using DT8204 as per Dwg D3405 3- use DT9681 to check if correct forming	0.00 0.00			DAS 30 9-89	40			14/04/29
140 *140* QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00 DAS 27 9-89 14/4/30				40			

# Work Order ID 110741

February-13-14 1:13:38 PM

**\*110741\***

Page 4

Item ID: D3405-041 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Gh Lug  
 Start Date: 07/01/2014 Start Qty: 40.00 **\*40\*** Cust Item ID:  
 Required Date: 07/01/2014 Req'd Qty: 40.00 **\*40\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180 <b>*180*</b> Powdercoat Powder-Coating	White Gloss(Ref:4.3.5.2) per QSI005 4.3-Steel <i>M 108434</i> Memo START TIME: <i>9:00</i> OVEN TEMPERATURE: <i>400</i> FINISH TIME: <i>9:30</i>	0.00 0.00				<i>1/3</i>	<i>14-6-24</i>	<i>DAS 34 9-89</i>	
190 <b>*190*</b> QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00	<i>EB</i>	<i>27</i>	<i>9-89</i>	<i>(EB)</i>			
200 <b>*200*</b> Packaging Packaging	Identify as per dwg & Stock Location: <i>81529</i> Memo	0.00 0.00				<i>28x</i>	<i>14-6-25</i>		

DAS  
28  
9-89



# Work Order ID 110741

February-13-14 1:13:38 PM

**\*110741\***

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Item ID: D3405-041 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Gh Lug  
 Start Date: 07/01/2014 Start Qty: 40.00 **\*40\*** Cust Item ID:  
 Required Date: 07/01/2014 Req'd Qty: 40.00 **\*40\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

210

QC21- Final Inspection - Work Order Release

0.00

**\*210\***

QC

Memo

0.00

Quality Control

MLS 14-06-25

MF 14-6-2

# Picklist Print

February-13-14 1:13:42 PM

Page 1

Work Order ID: 110741

\*110741\*

Parent Item: D3405-041

\*D3405-041\*

Parent Item Name: Gh Lug

Start Date: 07/01/2014

Required Date: 07/01/2014

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP A05.09.01 New issue KJ/JLM  
IPP B 09.01.28 rev.B drawing EC verified by:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3405-041P		Purchased	No				Each	0.0000		40			
*D3405-041P*									**				
Gh Lug													
D3404-1		Manufactured	No			100	Each	14.0000	1	40			
*D3404-1*									**				
GHW/ Lug													

## Location

## Loc Qty

## Loc Code

WA001	14	
119610x40	3	
108099	11	
110307		

D3405-1F as per p/o.

x40

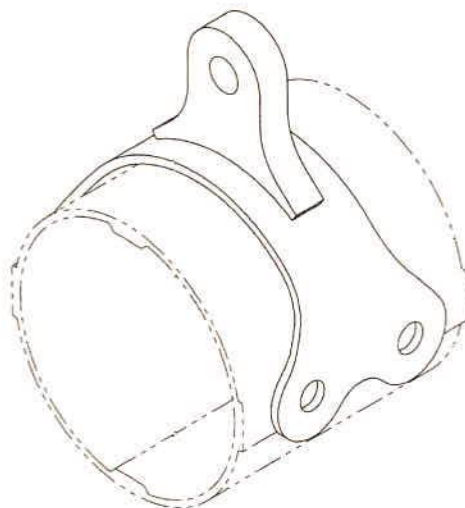
*[Handwritten signature]*



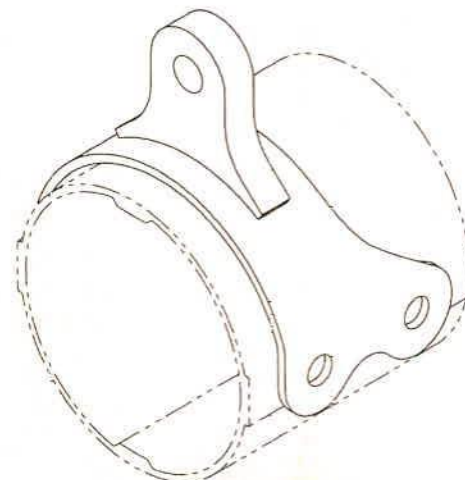


ITEM No.	QTY. -041	QTY. -043	PART NUMBER	DESCRIPTION
1	X		D3405-041	LUG ASSEMBLY
2		X	D3405-043	LUG ASSEMBLY
11	1	1	D3404-1	GHW LUG
12	1		D3405-1	GHW BRACKET
13		1	D3405-3	GHW BRACKET

B



**D3405-041 LUG ASSEMBLY**  
(SKID TUBE SECTION SHOWN  
FOR REF ONLY)



**D3405-043 LUG ASSEMBLY**  
(SKID TUBE SECTION SHOWN  
FOR REF ONLY)

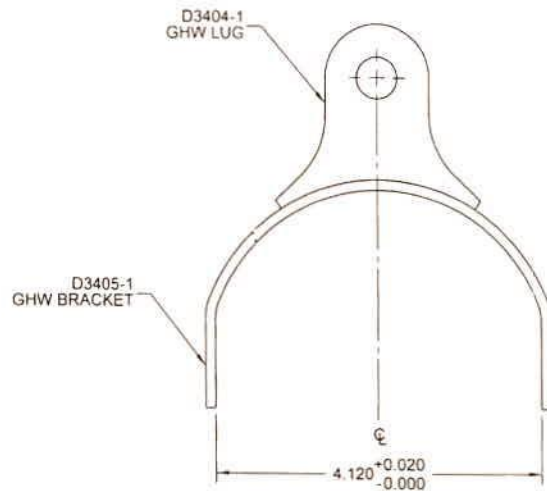
110741 MCT  
14-01-08

**RELEASED**  
08/12/18

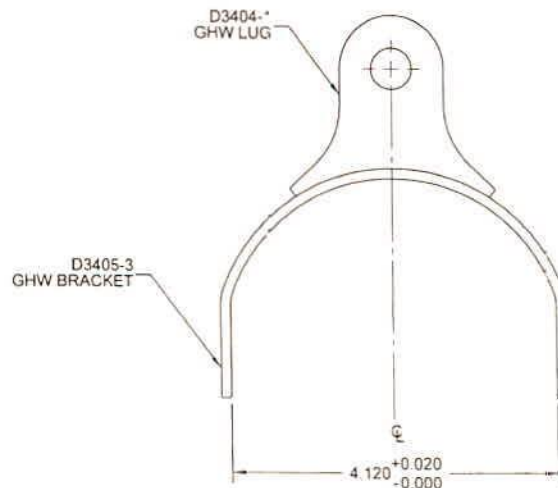
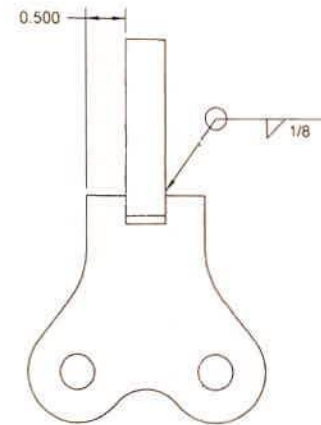
**NOTES:**

- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT ASSEMBLY WHITE (4.3.5.2) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3405-041" USING FINE POINT PERMANENT INK MARKER  
IDENTIFY WITH DART P/N "D3405-043" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: -041, 0.85 lbs  
-043, 0.87 lbs

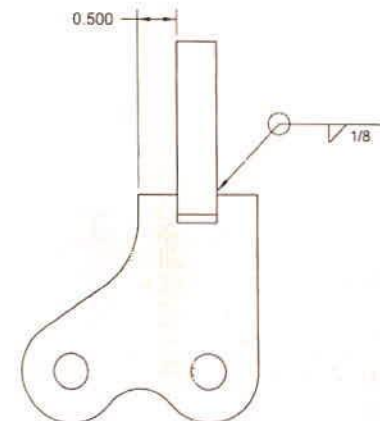
B	DRAWING REDRAWN IN SOLIDWORKS WITH CURRENT STANDARDS AND TRANSFERRED TO "B" SIZE BORDER. "FLAT" PATTERNS FOR -1 & -3 INCREASED IN LENGTH TO PREVENT FOULING AT INSTL (SEE PART 198) SHEETS 3 & 4 ZONE A5 4.120 DIM WAS 4.100.		AJS	08.09.19
A	NEW ISSUE		PH	05.03.08
REV	DESCRIPTION		BY	DATE
DESIGN	PH	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA		
DRAWN	AJS			
CHECKED		DRAWING NO.	REV. B	
MFG. APPR		D3405	SHEET 1 OF 4	
APPROVED		TITLE	SCALE	
DE APPR.		GHW LUG ASSEMBLY	NTS	
DATE	08.09.19	COPYRIGHT © 2005 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL. NO DISSEMINATION OR THE EXPRESS PERMISSION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.		



**D3405-041 LUG ASSEMBLY**



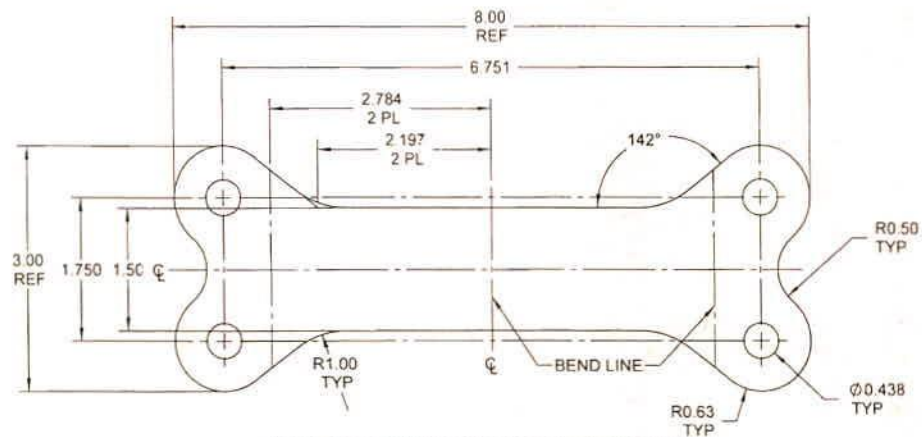
**D3405-043 LUG ASSEMBLY**



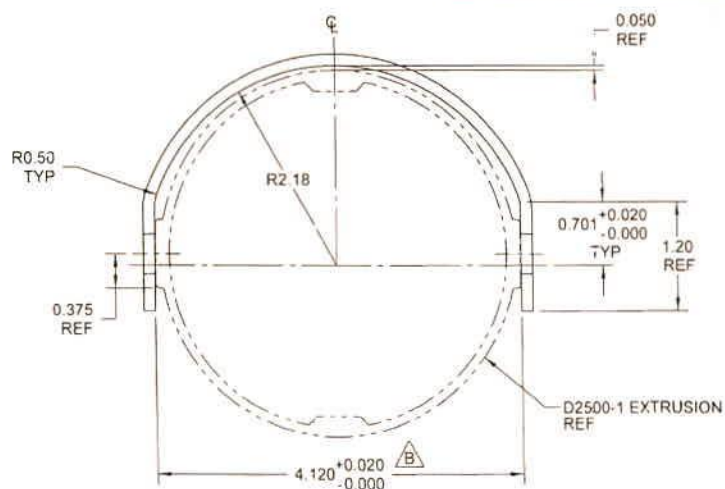
**RELEASED**  
06/21/84

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DRAWN	AJS		
CHECKED		DRAWING NO. <b>D3405</b>	REV. B
MFG. APPR.			SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		<b>GHW LUG ASSEMBLY</b>	NTS
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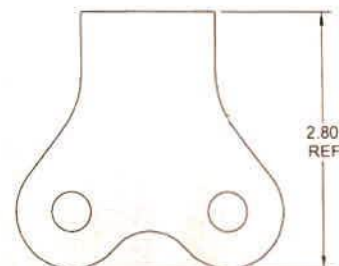




**D3405-1F GHW BRACKET FLAT PATTERN**



**D3405-1 GHW BRACKET**  
(MAKE FROM D3405-1F)



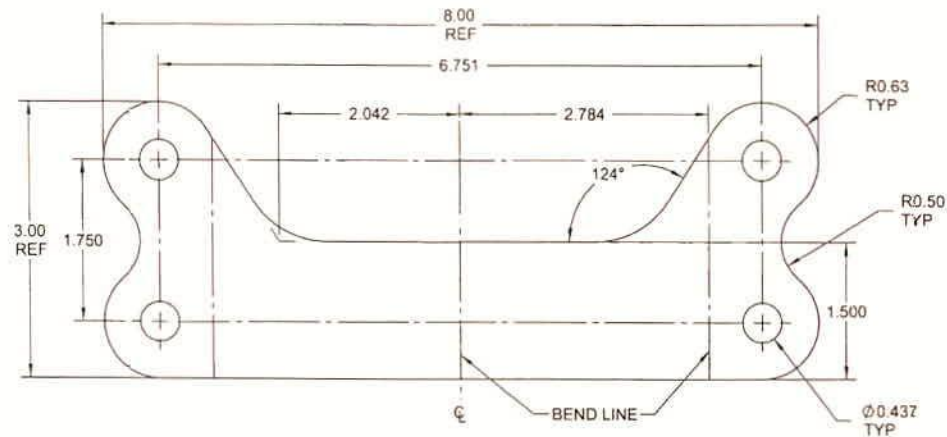
SIDE VIEW FOR REF ONLY

**NOTES**

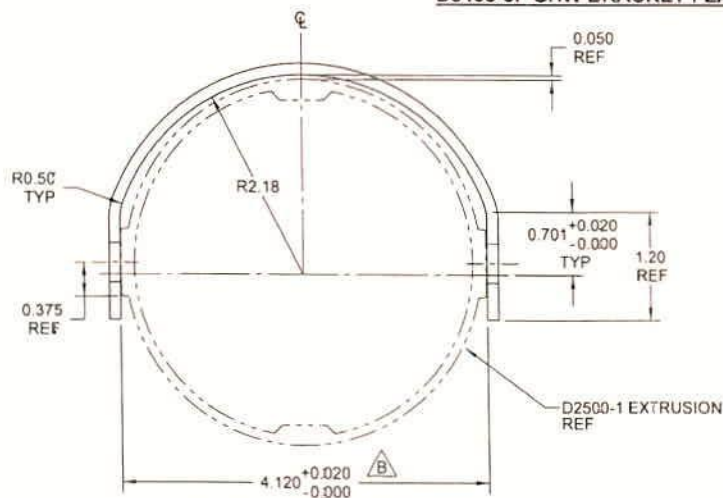
- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SHEET, 11 GAUGE (0.125 THICK)  
PER MIL-S-5059 (ANNEALED) 2B FINISH OR AMS 5513/5524  
REF. DART SPEC. M304S11GA
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK: SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A

DESIGN	PH	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED		DRAWING NO. <b>D3405</b>	REV. B
MFG. APPR.			SHEET 3 OF 4
APPROVED		TITLE <b>GHW LUG ASSEMBLY</b>	SCALE NTS
DE APPR.		COPYRIGHT © 2005 BY DART AEROSPACE LTD	
DATE	08.09.19	THIS DOCUMENT IS UNCLASSIFIED AND IS SUPPLIED ON THE BASIS OF CONFIDENTIALITY. IT IS NOT TO BE USED FOR ANY PURPOSE OR DISCLOSED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

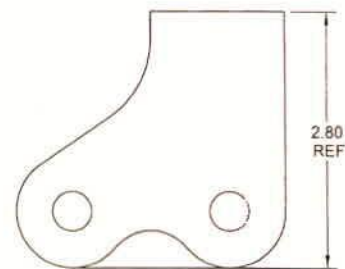
**RELEASED**



**D3405-3F GHW BRACKET FLAT PATTERN**



**D3405-3 GHW BRACKET**  
(MAKE FROM D3405-3F)



SIDE VIEW FOR REF ONLY

**NOTES:**

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SHEET, 11 GAUGE (0.125 THICK)  
PER MIL-S-5059 (ANNEALED) 2B FINISH OR AMS 5513/5524  
REF. DART SPEC. M304S11GA
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK: SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A

**RELEASED**  
08/12/19

DESIGN	PH	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D3405	SHEET 4 OF 4
APPROVED		TITLE	SCALE
DE APPR.		GHW LUG ASSEMBLY	NTS
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Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO23011**

Purchase Order Date 2/14/2014

PQ Print Date 2/14/2014

Page Number 4 of 9

**Order From :**

VC-LWC001

**Ship To :** DART AEROSPACE LTD

LOEBSACK WATERJET CANADA LTD.  
55 NORTHFIELD DR. E.  
P.O.BOX 339

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

WATERLOO, ONTARIO N2K 3T6

Contact Name

Vendor Phone

Ship To Contact

Ship To Phone

Ship Via:

FedEx PI collect

Ship Acct:

Buyer

Michael Gregoire

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

Line Total: \$479.00

11 D3405-1F

GHW/ Bracket

3/28/2014

40.00

\$10.40

Yes

Each

3/28/2014

Manufacture as per drawing D3405 rev.b  
B110741

Line Total: \$416.00

12 D4150-3P

Arm Plate

3/28/2014

40.00

\$4.80

Yes

Each

3/28/2014

Manufacture as per drawing D4150 rev.b  
B111062

Line Total: \$192.00

13 D4151-1P

Lower Hardpoint Plate

3/28/2014

40.00

\$5.45

Yes

Each

3/28/2014

Manufacture as per drawing D4151 rev.c  
B112572

**PO Instructions:** PROCUREMENT QUALITY CLAUSES

A005 RIGHT OF ENTRY

A008 FIRST ARTICLE INSPECTION (FAI) BY SELLER, (DOCUMENTATION SENT TO DART AEROSPACE)

A012 CHEMICAL AND PHYSICAL TEST REPORTS

A016 PERSONNEL QUALIFICATION

A017 RAW MATERIAL IDENTIFICATION (AS APPLICABLE)

A026 CERTIFICATION OF MATERIAL CONFORMANCE

A042 DART NOTIFICATION BY SUPPLIER

Note:



## Certificate of Compliance

Sold To: DART Aerospace

Purchase Order Nu ID PO23011

Item	Quantity	Part Number	Revision	Description	Mtl. / Thk.	HT Number
18(4)	60	D3065-1	b	STEP SPACER	2024-T3 / 0.040"	663172A5
19(5)	100	D3065-3	b	STEP SPACER	2024-T3 / 0.040"	663172A5
21(7)	60	D3065-7	b	STEP SPACER	2024-T3 / 0.040"	663172A5
20(6)	110	D3065-5	b	STEP LEG	5052-H32 / 0.080"	3C5291
9(8)	20	D4093-1	d	BRACKET	6061-T6 / 0.750"	37797032
10(9)	10	D4093-3	d	BRACKET	6061-T6 / 0.750"	37797032
8(2)	20	D3319-1	c	WEARPLATE	CRS 18GA / 0.048"	3683T3-51
7(1)	20	D3319-3	c	WEARPLATE	CRS 18GA / 0.048"	3683T3-51
22(3)	120	D3537-1F	c	WEARPAD	304 SS / 0.063"	A1303988
11(10)	40	D3405-1F	b	GHW BRACKET	304 SS / 0.120"	350420

This is to certify that the whole of the supplies detailed hereon has been inspected, tested, packed, and unless otherwise stated, conform in all respects with the requirements of the contract or order.

Name: Derek Loebsack

Title: President

Sign:



Dated:

07-14-04

# THYSSENKRUPP MATERIALS NA

J.M. WOODTURNING LTD

ALUMINUM PLATE 6061-T651  
750" THICK X 48.5000" X 96.5000"  
PART NO.

PO/Rel FRED

We certify that this is a true copy of the report  
furnished by the producer of the metal, or data  
resulting from tests made in approved labs.

## Certificate of Mill Test Results

BL PEC-851084-001

19Nov13

Pg 1/1

Signed by: \_\_\_\_\_

### TEST CERTIFICATE



Certificate No: 12091B2652

Hulamin Limited Reg. No. 154001294/09 VAI Reg. No. 4061149804  
HEAD OFFICE: Mowee Muhlitz Rd, Pilsenmühlburg 3201, P.O. Box 74, Pilsenmühlburg 3200, South Africa  
Telephone: +27 30 255 6811 Telex: +27 33 394 0335

<b>BUYER:</b> TA CHEN INTERNATIONAL INC 5855 ODISHO AVE LORD BEACH CA 90803	<b>Hulamin Lot No:</b> H.012523 <b>Lot No:</b> 17/08/032C8 <b>PList No:</b> 2/1101413 <b>Release No:</b> RE000050	<b>Product:</b> PLATE HEAT TREATED LISHED, 6061-T651 0.75" x 48.5" x 96.5" <b>Dimension:</b> 0.75" X 48.5" X 96.5" <b>Alloy - Temper:</b> 6061 - T351
	<b>Cust Order No:</b> N03100-9 <b>HULAMIN Order No:</b> 181742E <b>Item Part:</b> 1/1	<b>Certificate No:</b> 12091B2652 <b>Cust Ref/Part No:</b> <b>Combined PList No:</b> R'2184

Case No: PFW871

#### MECHANICAL TEST RESULTS

Lot No.	Cast No.	Metal Id	Alloy	Spec No	Mechanical Properties							
					Yield Strength (Ksi)	UTS (Ksi)	Elongation A50 (%)	Enrlog (%)	Test Date	Gauge Length (Inches)	Bend Test	Actual Gauge (Inches)
Spec				Min	35.1	42.0	9					0.75
				Max								0.751
17/08/032C8	VAST	3799/032	6061	1	41.8	46.7	15		07/09/12	2		0.755
				2	41.8	46.7	15		07/09/12	2		0.755

#### CHEMICAL COMPOSITION

	Cast No.	Alloy	Si (%)	Pb (%)	Cu (%)	Mn (%)	Mg (%)	Cr (%)	Zn (%)	Ti (%)	Each (%)	Total (%)	Al (%)
Min			0.40		0.15		0.8	0.04					
Max			0.8	0.7	0.40	0.15	1.2	0.35	0.25	0.15	0.05	0.15	
	VAST	6061	0.69	0.44	0.28	0.11	1.01	0.21	0.01	0.012			97.20

CONFORMS TO: ASME B3-306 ASTM B209 TO ASME B209 ASME B209-11, 00, 1997

For purposes of determining conformance with these specifications, an observed value or a calculated value shall be rounded "to the nearest unit" in the last right-hand digit used in expressing the specification limit, in accordance with the rounding method of ASTM Practice E29, for Using Significant Digits in Test Data to Determine Conformance with Specifications.

WE HEREBY CERTIFY, THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLES WITH THE TERMS OF THE ORDER CONTRACT. THE INSPECTION RESULTS INDICATED IN THE CHEMICAL COMPOSITION HAVE BEEN OBTAINED FROM CAST ANALYSIS.

DI A. Pooten (HEAD OF CHEMICAL TESTING)

Ver 1.0.1

V. Winkler (HEAD OF PHYSICAL TESTING)

Printed Date: 19 Nov 2013

1 of 1

MILL TEST REPORT  
Customer: COPCON POC: PEC-253613 SO: PFW420  
Item: 750489660617651 Bundle: PFW871 Heat: 37797032  
TA CHEN INTERNATIONAL, INC.

This MTR contains 1 page (Page 1)  
MTR#: HLCR181764\_P1



# KAISER ALUMINUM FABRICATED PRODUCTS

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

Kaiser Aluminum  
Trentwood Works  
Spokane, WA 99215-5108  
(800) 367-2586

CUSTOMER PO NUMBER: 5400197766-20		WORK PACKAGE:		CUSTOMER PART NUMBER: ALFLR01581		PRODUCT DESCRIPTION: HT Flat Sheet	
KAISER ORDER NUMBER: 1160889	LINE ITEM: 2	SHIP DATE: 11/14/2013	ALLOY: 2024		CLAD: BARE	TEMPER: T3	
WEIGHT SHIPPED: 3293 LB	QUANTITY: 117 PCS EST.	B/L NUMBER: 2044959	GAUGE: 0.0400 IN		WIDTH: 48.000 IN	LENGTH: 144.000 IN	
SHIP TO: COPPER & BRASS SALES 404 CENTURA COURT SPARTANBURG, SC 29303 US				SOLD TO: COPPER & BRASS SALES ATTN: ACCOUNTS PAYABLE P.O. Box 5116 SOUTHFIELD, MI 48086 US			

MHU 1730227: LOT 663172A5: 117 pieces

### Certified Specifications

AMS 4037/RevP AMS-QQ-A-250/4/RevA ASTM B 209/Rev10 CMMP 019/RevD CMMP 025/RevU

### Test Results:

Test Code: 1504

LOT: 663172A5 CAST: 641 DROP: 27 INGOT: 3

Melted in USA

(ASTM E8/B557)

(EN 2002-1)

Tensile: Temper  
T3

Dir/#Tests

LT / 02 (Min:Max)

Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
68.1 : 68.2	46.0 : 46.1	17.1 : 17.8
(470 : 470)	(317 : 318)	

(ASTM E1251)

Chemistry:

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.09	0.23	4.7	0.57	1.3	0.01	0.16	0.02	0.01	0.00	TOT 0.03

Chemistry:

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
2024	MIN 0.00	0.00	3.8	0.30	1.2	0.00	0.00	0.00	0.00	0.00	MAX 0.05
	MAX 0.50	0.50	4.9	0.9	1.8	0.10	0.25	0.15	0.05	0.05	TOT 0.15

Aluminum Remainder

Plant Serial: 4315340

Kaiser Order Number: 1160889

Line Item: 2

Page 1 of 2

From: ThyssenKrupp Materials NA

Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2402984673

CstAr

CstOr 256039

Wgt.: 55.296 LB

Date 02/20/2014

*John R. Zambetti*



**KAISER**  
**ALUMINUM**  
FABRICATED PRODUCTS

*Best in Class*

**CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

Kaiser Aluminum  
Trentwood Works  
Spokane, WA 99215-5108  
(800) 367-2586

**CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC (Kaiser) hereby certifies that metal shipped under this order was melted in the United States of America or a qualifying country per DFARS 225.872-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content. This material has been inspected, tested and found in conformance with the requirements of the applicable specifications as indicated herein. For material thicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements. All metal which is solution heat treated complies with AMS 2772. Any warranty is limited to that shown on Kaiser's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of Kaiser Aluminum Fabricated Products, LLC laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law. ISO-9001:2000 certified.

JAMES HEMENWAY, LABORATORIES SUPERVISOR

*James Hemenway*

Plant Serial: 4315340  
Kaiser Order Number: 1160899  
Line Item: 2

Page 2 of 2

From: ThyssenKrupp Materials NA  
Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2402984673  
CstAr CstOr 256039  
Wgt.: 55.296 LB Date 02/20/2014

*John R. Zambetti*



FORM: 1006

WORKORDER:

2402984673

# COPPER AND BRASS SALES

MATERIAL TYPE

ALUMINIUM ALLOYS

PRODUCT DESIGNATION

2014 2024 2224 2324 7050 7075 7150 7175 7475 ALUMEC 89 ALUMEC 99 QC-7

## "WARNING"

SMALL CHIPS, FINE TURNINGS AND DUST MAY IGNITE READILY. EXPLOSION POTENTIAL MAY BE PRESENT WHEN: DUST OR FINES ARE DISPERSED IN THE AIR; FINE, DUST OR MOLTEN ALUMINUM ARE IN CONTACT WITH CERTAIN METAL OXIDES; OR, CHIPS, FINES, DUST OR MOLTEN ALUMINUM ARE IN CONTACT WITH WATER OR MOISTURE. KEEP AWAY FROM IGNITION SOURCE. USE EXPLOSION-PROOF VENTILATION. KEEP MATERIAL DRY.

THIS PRODUCT CONTAINS BERYLLIUM AND COPPER. INHALING BERYLLIUM DUST OR FUMES MAY CAUSE CHRONIC BERYLLIUM DISEASE (CBD), A SERIOUS CHRONIC LUNG DISEASE IN SOME INDIVIDUALS. BERYLLIUM IS A CANCER HAZARD; OVER TIME CBD AND CANCER CAN BE FATAL. TARGET ORGAN IS PRIMARILY THE LUNG. INHALING LARGE AMOUNTS OF COPPER, MAGNESIUM OXIDE, MANGANESE OXIDE, AND ZINC OXIDE FUMES OR DUST MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS. CHRONIC OVEREXPOSURE TO COPPER MAY CAUSE THICKENING OF THE SKIN; AND SKIN, TEETH, AND HAIR DISCOLORATION. CHRONIC OVEREXPOSURE TO MANGANESE DUST CAN CAUSE CENTRAL NERVOUS SYSTEM DAMAGE, SCARRING OF THE LUNGS AND REPRODUCTIVE HARM IN MALES. TARGET ORGAN IS PRIMARILY THE LUNG, BUT REPEATED HIGH EXPOSURE CAN ALSO AFFECT THE LIVER. CHRONIC OVEREXPOSURE TO IRON OXIDE DUST/FUME MAY CAUSE LUNG SIDEROSIS. CHRONIC OVEREXPOSURE TO SILICON DUST CAN CAUSE CHRONIC BRONCHITIS. OVEREXPOSURE TO AMORPHOUS SILICA CAN CAUSE DRYING OF THE MUCOUS MEMBRANES OF THE EYES, NOSE, AND THROAT.

THIS PRODUCT ALSO CONTAINS NICKEL AND CHROMIUM COMPOUNDS. INHALATION OF NICKEL DUST OR FUME MAY RESULT IN INFLAMMATION OF THE RESPIRATORY TRACT AND CAUSE NASAL AND/OR LUNG CANCER. NICKEL HAS BEEN IDENTIFIED AS A POTENTIAL HUMAN CARCINOGEN. EXPOSURE TO CHROMIUM DUST OR FUMES MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS AND KIDNEY AND LIVER DAMAGE. UNDER HIGH TEMPERATURES, HEXAVALENT CHROMIUM MAY BE PRODUCED. IF IN THE INSOLUBLE FORM, IT IS A CONFIRMED HUMAN CARCINOGEN. (CALIFORNIA PROPOSITION 65).

IF COATED WITH OIL, MAY CAUSE SKIN IRRITATION/DERMATITIS BY CONTACT. WELDING FUME IS LISTED AS A POSSIBLE CARCINOGENIC TO HUMANS.

READ THE ALUMINIUM/ALUMINIUM ALLOYS MATERIAL SAFETY DATA SHEET (MSDS) ON FILE WITH YOUR EMPLOYER BEFORE WORKING WITH THIS MATERIAL.

\* If processing or recycling produces particulate, use exhaust ventilation or other controls designed to prevent exposure to workers. Examples of such activities include melting, welding, grinding, abrasive sawing, sanding and polishing. Any activity which abrades the surface of this material can generate airborne particulate. Use appropriate NIOSH approved respiratory protection (P95; P100 for lead with, quantitative fit testing required) if exposures exceed the permissible limits.

\* The Occupational Safety and Health Administration (OSHA) have set mandatory limits on occupational exposures.

\* Aluminum, in solid form and as contained in finished products presents no special health risk.

\* Sold for manufacturing purposes only. This product can be recycled; contact your sales representative.

For additional information, call or write to Copper and Brass Sales, 22355 West Eleven Mile Road, Southfield, MI 48033, telephone 248-233-5600, or visit our web site @ [www.copperandbrass.com](http://www.copperandbrass.com).

ALUMINUM LABEL NO. 300-1056

ISSUED 10/01/2008



# ADITYA BIRLA HINDALCO INDUSTRIES LIMITED



Jeevan Deep Building, 6 Prafulla Chandra Sra Sarani,  
Kolkata-700071, India, Tel: 91-33-22402110  
Fax: 91-33-22884808  
Regd. Office: Century Sheraton, Dr. Ambedkar Road, Worli,  
Mumbai - 400 029, INDIA.

Page 2 of 2

Date: 20-SEP-13

NAME OF THE PARTY: HYERSON CANADA INC., 161 THE WEST MALL, TORONTO, ONTARIO M5C4V6, CANADA.  
PRODUCT: ALUMINIUM SHEET.  
QTY (MT): 20.923  
LC/PO. # DATE: 64687167 Dt. 20.08.2013  
INVOICE NO: MKB/R/2014/72

**COPY**

## QUALITY CERTIFICATE

SRNO	Package No.	Alloy Temper	Mat Wt (MT)	Size (mm)	Coil Nos.	Cast No./Kast No.
11	3C53086	AA3052, H22	1.485	2438 x 1219 x 2.03	H13HASH0805017	3C53086
12	3C52981	AA3052, H22	1.517	2438 x 1219 x 2.03	H13HASH0805018	3C52981
13	2D019280182	AA3052, H32	1.502	3048 x 1524 x 2.54	H13HASH0819010	2D019280182
14	2D0193A0185	AA3052, H32	1.505	3048 x 1524 x 2.54	H13HASH0819011	2D0193A0185
Total:-			20.923			

## CHEMICAL COMPOSITION (%)

Cast No.	Si	Fe	Mn	Pb	Cu	Sn	Cr	Ti	Al	Er	Wt	Pb	V	Co	Bi	Others	Sam. Allow.
11 3C53086	.2	.48	.137	2.6	.009	0	0	.011	0	0	0	0	0	0	0		96.397
12 3C52981	.2	.49	.137	2.6	.009	0	0	.011	0	0	0	0	0	0	0		96.397
13 2D019280182	.131	.785	.041	2.415	.01	0	0	.02	0	0	0	.005	0	0	0		96.887
14 2D0193A0185	.134	.301	.056	2.367	.016	0	0	.02	0	0	0	.005	0	0	0		96.88

## MECHANICAL PROPERTIES

## OTHER TESTS

Cast No.	UTS (Kg/mm2)	PS (Kg/mm2)	% Elongation	Feed Test
11 3C53086	22.9	0	9.5	0 T Satisfactory
12 3C52981	22.4	0	10	0 T Satisfactory
13 2D019280182	23.2	0	10.6	0 T Satisfactory
14 2D0193A0185	22.6	0	11.8	0 T Satisfactory

Remarks:- (1) HYERSON PO NO.736670 (2) ISSUED BY THE MANUFACTURER.







ESSAR STEEL ALGOMA INC., 105 West Street, Sault Ste. Marie, Ontario, Canada P6A 7B4

SO No., Item & Date.: 8017177 000020 2014/01/09	Shipment No. & Date.: 1000083594 2014/01/10	TC No., Date & Time : ESA-128192 2014/01/12 - 08:41:14
Sold to Customer Name and Address : RYERSON INC FINANCIAL DRIVE 7525 BRAMPTON, Ontario, Canada L6Y 5P4	Ship to Customer Name and Address: RYERSON INC FINANCIAL DRIVE 7525 BRAMPTON, Ontario, Canada L6Y 5P4	Customer PO NO./Item: 744335 / 2 BOL NO.: 1000083594 Cust. Part No.: 7804-2405 Carrier : NATIONAL TRANSPORTATION - 1158A
Customer Specification : CR STEEL SHEET Carbon CQ / CS ASTM A1008 CS TY B (2012) Mark Number 7804-2405 Batch Annealed Top Semi Critical Surface Improved Shape Pickled Light Oiled Light Matte Finish Edge Sealant Required Std Thickness Tol		

Supplementary Instructions : Test Cert 1:905-792-1617

Temp T/R : Chemical Analysis

Cust Use : AUTO IMPROVED SHAPE & SURF

ESSAR STEEL ALGOMA INC. HEREBY CERTIFIES THAT THE MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF THE SPECIFICATION SHOWN. ALL RESULTS ARE RETAINED IN ACCORDANCE WITH THE COMPANY'S STANDARD RECORD KEEPING PRACTICES.  
THIS MILL TEST REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF ESSAR STEEL ALGOMA INC. IF YOU RECEIVE THIS DOCUMENT AND ARE NOT THE INTENDED RECEIVER, PLEASE CALL (705)945-4096 FOR INSTRUCTIONS ON METHOD OF DISPOSAL OF DOCUMENT.

MEETS EN 10204 3.1  
ISO QUALITY AND ENVIRONMENTAL CERTIFICATES AVAILABLE AT WWW.ESSARSTEELALGOMA.COM

ALL HEATS FULLY KILLED.  
HEATS INDICATED WITH (+) FINE GRAINED.  
HEATS INDICATED WITH (-) MADE IN CANADA WITH DOMESTIC AND NORTH AMERICAN MATERIALS.

Dimensions (T x W x L)	Batch No.	Heat No.-MS	Quantity	Pcs
0.0440" x 48.000"	SAM9918B	3683T3-51	21,740 LB	1

CHEMICAL PROPERTIES															
Heat No. (wt%)	C	Mn	P	S	Si	Cr	Ni	Cu	Mo	Al	Nb	V	B	Ti	N
3683T3 <sup>+</sup>	0.04	0.26	0.003	0.007	0.020	0.01	0.01	0.01	0.00	0.035	0.000	0.000	0.0000	0.001	0.0033

K. UGHADPAGA  
MANAGER METALLURGICAL SERVICES

**\*\*WARNING\*\*** THE TEST RESULTS AND VALUES REPORTED HEREIN INDICATE ONLY THAT (1) THE PARTICULAR STEEL FOR WHICH THIS CERTIFICATE IS ISSUED MEETS THE MINIMUM SPECIFIED YIELD STRENGTH AND (2) THE ANALYSIS AND PHYSICAL PROPERTIES OF SUCH STEEL ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE SPECIFICATION INDICATED. THE RESULTS OR VALUES REPORTED HEREIN CAN NOT BE USED TO QUALIFY THE STEEL FOR ANY SPECIFICATION OTHER THAN THE ONE INDICATED AND CAN NOT BE RELIED UPON FOR ANY PURPOSE (INCLUDING DESIGN OR CALCULATIONS) AS REPRESENTING THE ACTUAL STRENGTH OF SUCH STEEL.



PO/Rel

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Signed by:

Attn: RICK

PART NO.

## 产品质量证明书 MATERIAL TEST CERTIFICATE

无锡宝昌金属制品有限公司

Wuxi Baochang Metal Products Co., Ltd

PAGE 2 OF 2

单号: EX13093010S  
Order No.  
货方: GLOBAL STAINLESS STEEL INC.  
Order  
用厂家: GLOBAL STAINLESS STEEL INC.  
ONSIGNEE

品名: STAINLESS STEEL SHEETS,  
Commodity SLIT EDGE

标准: ASTM A240/A240M  
Specification:

牌号: 304  
Type  
表面加工: 2B  
Surface Finish  
编号: EX1309301  
Invoice No.  
发行日期: 2013-10-26  
Date

序号 No.	货物编号 Product No.	产品尺寸 Product Size			数量 Number	重量 Weight Kg	拉伸试验 Tensile Test			表面 硬度 Hardness HRB	炉批号 HEAT NO.	化学成分 Chemical Composition (%)							
		厚度 Thickness MM	宽度 Width MM	长度 Length MM			屈服强度 0.2% YS N/mm <sup>2</sup>	抗拉强度 TS N/mm <sup>2</sup>	延伸率 EL %			C Si Mn P S Ni Cr N							
12	13102612	0.6096	1219.2	2438.4	118	1612	250	690	57	83	A1300883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400
13	13102613	0.6096	1219.2	2438.4	118	1616	250	690	57	83	A1301883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400
14	13102614	0.7620	1219.2	2438.4	88	1644	271	665	58	89.5	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400
15	13102615	0.7620	1219.2	2438.4	87	1626	271	665	58	89.5	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400
16	13102616	1.2192	1219.2	2438.4	54	1494	267	695	55	87	A1303987	0.0400	0.350	1.1000	0.0330	0.0010	8.0200	18.160	0.0400
17	13102617	1.2192	1219.2	2438.4	50	1378	267	695	55	87	A1303987	0.0400	0.350	1.1000	0.0330	0.0010	8.0200	18.160	0.0400
18	13102618	1.2192	1219.2	3048	42	1460	267	695	55	87	A1303987	0.0400	0.350	1.1000	0.0330	0.0010	8.0200	18.160	0.0400
19	13102619	1.2192	1219.2	3048	45	1374	267	695	55	87	A1303988	0.0400	0.430	1.1300	0.0380	0.0010	8.0300	18.230	0.0300
20	13102620	1.5240	1219.2	2438.4	43	1485	271	680	52	87	A1303988	0.0400	0.430	1.1300	0.0380	0.0010	8.0300	18.230	0.0300
21	13102621	1.5240	1219.2	2438.4	43	1487	271	680	52	84	A2304006	0.0300	0.440	1.1500	0.0380	0.0010	8.1000	18.250	0.0400
22	13102622	1.9050	1219.2	2438.4	40	1725	268	650	53	84	A2304006	0.0300	0.440	1.1500	0.0380	0.0010	8.1000	18.250	0.0400
23	13102623	1.9050	1219.2	2438.4	41	1755	268	650	53	84	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400
24	13102624	3.0480	1219.2	3048	17	1482	280	675	54	84	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400
25	13102625	3.0480	1219.2	3048	19	1656	280	675	54	84	A1303883	0.0400	0.390	1.1300	0.0350	0.0010	8.0200	18.120	0.0400

备注 (Remarks):

1. 尺寸和表面: 合格  
Size and Surface: Guaranteed

兹证明所列产品均符合订单和标准的制造要求

WE HEREBY CERTIFY THAT THE MATERIAL HEREIN  
HAS BEEN MADE IN ACCORDANCE WITH THE ORDER AND  
SPECIFICATION

\*此报告仅可完全复制

\*The report can only be copied completely

技术本部  
TECHNICAL DEPT.

无锡宝昌金属制品有限公司  
WUXI BAOCHANG METAL PRODUCTS CO., LTD.

NO. 8465 P. 2

MATERIAL

FEB. 28. 2014 3:46PM



